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Indian Standard
SPECIFICATION FOR
PORK LUNCHEON MEAT, CANNED
(First Reprint JULY 1983)

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR PORK LUNCHEON MEAT, CANNED

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AMENDMENT NO. 1 APRIL 2004
TO
IS 4352 : 1967 SPECIFICATION FOR PORK
LUNCHEON MEAT, CANNED

(*Page 4, clause 3.1.1*) — Insert the following clause after 3.1.1 :

3.1.2 Quality of water used for processing shall conform to IS 4251 : 1967§.'

(*Page 4, footnote*) — Insert the following footnote at the end:

§Quality tolerances for water for processed food industry.'

(FAD 18)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 APRIL 2011
TO
IS 4352 : 1967 SPECIFICATION FOR
PORK LUNCHEON MEAT, CANNED

[Page 7, clause 4.2(c)] — Substitute 'Net quantity of content of the can;' for 'Net weight content of the can;'.
for 'Net weight content of the can;'.

[Page 7, clause 4.2(g)] — Insert the following at the end:

- 'h) Any other marking required under the *Standards of Weights and Measures (Packaged Commodities) Rules, 1977*, and the *Prevention of Food Adulteration Act, 1954* and the Rules framed thereunder.'

(FAD 18)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR PORK LUNCHEON MEAT, CANNED

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 15 November 1967, after the draft finalized by the Meat and Meat Products Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 The demand for pork luncheon meat is increasing considerably, both from the civilian population as well as the defence personnel. It was, therefore, felt that this standard should be formulated so that suitable quality control may be exercised.

0.3 In the preparation of this standard, due consideration has been given to the provisions of the Prevention of the Food Adulteration Act, 1954, and the rules framed thereunder. However, this standard is subject to the restrictions imposed under this Act, wherever applicable.

0.4 In the preparation of this standard assistance has been derived from the following publications:

CFS 5-1-6 Luncheon-meat, canned. Commonwealth Food Specifications, Commonwealth of Australia

PP-P-578 Federal specification for pork, luncheon-meat, canned (fully processed). Federal Supply Service, General Services Administration, USA.

0.5 This standard contains clauses regarding packing and marking (*see 4.1, 4.1.1 and 4.2*) of pork luncheon meat, canned, which call for an agreement between the purchaser and the packer at the time of placing orders.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of test for pork luncheon meat, canned.

*Rules for rounding off numerical values (*revised*).

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Meat — The uncured, sound and wholesome flesh of the pig, namely, pork, used as food (*see* IS : 1723-1960*).

2.2 Offal — Includes brain, fries (liver), gut, paunches, udders, sweet-breads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, skin (rind), cartilage and bony tissues.

2.3 Pork Luncheon Meat — A mixture of minced meat and cereal containing not less than 80 percent pork meat including fat (not exceeding 25 percent).

3. REQUIREMENTS

3.1 Hygienic Requirements — The material shall be prepared and handled under strict hygienic conditions by persons free from contagious and infectious diseases and only in premises maintained in a thoroughly clean and hygienic condition and having adequate and safe water supply (*see* IS : 2491-1963†) and duly approved and licensed by the public health authorities concerned. All workers shall use clean, washed, white clothings. Necessary precautions shall be taken to prevent incidental contamination of the product from soiled equipment or from personnel suffering from injuries.

3.1.1 All equipment coming in contact with raw materials or products in the course of manufacture shall be kept clean. An ample supply of steam and water, hose, brushes and other equipment necessary for proper cleaning of machinery and equipment shall be available. The equipment may be sterilized by immersion in, or swabbing with hypochlorite or other suitable chlorine solution.

3.2 Ingredient Requirements

3.2.1 Quality of Meat — The meat used for the product shall be derived from healthy animals subjected to ante-mortem and post-mortem inspections in accordance with IS : 1982-1962‡, and slaughtered in licensed premises. The pork shall be of good and uniform colour. It shall be properly trimmed so as to be free of excess fat, blood clots, bruises, bones, skin, gristle, fibrous tissues, glands, tendons, serous membranes, and coarse connective tissues. Five percent of heart may be added after proper cleaning and processing. In case frozen trimmings and frozen pork are used, they should not exceed 50 percent of the total quantity and should not have been stored in the freezer

*Specification for pork.

†Code for sanitary conditions for food processing units.

‡Code of practice for ante-mortem and post-mortem examination of meat animals.

for more than 90 days. It should not show freezer burn and rancidity, and be sound and of good colour. Soft and oily pork shall not be used. It shall be free from foreign odour or flavour, discolouration, and deterioration. Scrap meat and offal shall not be used.

3.2.2 Filler — Only cereal rusk, cracker meal (broken biscuits), potato flour or other wholesome edible material of farinaceous origin not exceeding 7 percent of the total lot shall be used as filler. Soya product shall not be used.

3.2.3 Salt — Salt used shall conform to IS:253-1964* and shall be sterilized at 160° to 170°C for two hours before use. Its content shall not exceed by 3 percent of total lot.

3.2.4 Nitrate and Nitrite — The nitrate content shall not exceed 0.05 percent by weight (expressed as potassium or sodium nitrate) and the nitrite content 0.02 percent by weight (expressed as potassium or sodium nitrite) in the finished product.

3.2.5 Other Ingredients — All other ingredients and seasonings, such as sugar and spices, shall be clean, sound and fully wholesome and fit for human consumption in all respects. Sugar, if used, shall be properly sterilized.

3.2.6 Fat — The pork fat shall be pure, wholesome and edible, and shall not be soft and oily in character.

3.3 Preparation and Processing — Pork luncheon meat, canned, shall contain no preservative other than salt, potassium (or sodium) nitrate or nitrite, sugar and seasonings. The meat, chilled at 4.5°C, shall be properly chopped and seasoned in accordance with the best commercial practice and under satisfactory hygienic conditions in respect of operative, material and equipment in use. The product shall be solid packed under hygienic conditions into sound and thoroughly clean containers and then sealed hermetically. If the cans are lacquered, the lacquer used shall be of such quality that it does not impart any foreign unpleasant taste and smell to the contents of the can, and does not peel off during processing and storage of the product. The lacquer shall not be soluble in fat or brine to any extent. The cans shall show no evidence of rusting. The cans shall be thoroughly cleaned by means of hot water jet or other approved satisfactory methods before filling. Processing shall be at such temperature and for such length of time as will ensure thorough cooking and adequate sterilization of the product without burning, scorching or overcooking.

3.4 Requirements of the Finished Product

3.4.1 Flavour and Appearance — Pork luncheon meat, canned, shall have characteristic flavour and taste of pork meat. The colour shall be uniform. No artificial colouring matter shall be used.

*Specification for edible common salt (revised).

3.4.2 Fill of Container — The product shall occupy not less than 85 percent of total volume capacity of the container when tested according to the method prescribed in Appendix A.

3.4.3 Freedom from Defects — The product shall be free from foreign matter, such as hair, bristle and skin. The product shall also be free from objectionable odour or flavour. The final product shall not show evidence of burning, scorching or overcooking.

3.4.4 Composition — When tested according to the method prescribed in Appendix B, the finished product shall have good lean meat content and shall have not less than 80 percent by weight of total meat of which fat shall not exceed by 25 percent. The total percentage of binder, seasoning, salt, sugar and moisture shall not exceed 20. The meat in the can shall have been processed according to the best commercial practice.

3.4.5 Vacuum — The can shall give a negative pressure of not less than 15 cm of vacuum at $27^{\circ} \pm 2^{\circ}\text{C}$ under normal atmospheric pressure.

3.4.6 The material shall also conform to the limits for metallic impurities and microbiological activity as prescribed in Table 1.

TABLE 1 LIMITS FOR METALLIC IMPURITIES¹ AND MICROBIOLOGICAL ACTIVITY

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST (REF TO APPENDIX IN IS : 1743-1960*)
(1)	(2)	(3)	(4)
i)	Arsenic, ppm, <i>Max</i>	1	J
ii)	Lead, ppm, <i>Max</i>	5	K
iii)	Copper, ppm, <i>Max</i>	15	L
iv)	Zinc, ppm, <i>Max</i>	19	M
v)	Tin, ppm, <i>Max</i>	140	N
vi)	Microbiological activity	To satisfy the requirements of the test	P

*Specification for meat of sheep and goats canned in brine.

4. PACKING AND MARKING

4.1 Packing in Cans — Subject to the agreement between the purchaser and the vendor, each can (if not lacquered for meat packing) shall be coated on the inner side with edible gelatin, lard or lined with vegetable parchment paper before filling the product.

4.1.1 Packing — Unless otherwise specified, cans shall be packed in cases sufficiently strong to withstand rough handling during transit.

4.2 Marking — The cans may be labelled either by printing or lithographing on the cans themselves or by pasting printed labels as agreed to between the purchaser and the vendor. The label shall bear the following information:

- a) Name of the product along with brand name, if any;
- b) Name and address of the manufacturer;
- c) Net weight content of the can;
- d) Batch or code numbers — embossed indelibly on the can;
- e) Warranty given by the manufacturer to be not less than 12 calendar months;
- f) Name of ingredients; and
- g) Licence number given by the health authorities.

4.2.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

5. SAMPLING

5.1 Sampling of pork luncheon meat, canned, shall be done according to the method prescribed in Appendix C.

APPENDIX A

(Clause 3.4.2)

DETERMINATION OF THE FILL OF THE CONTAINER

A-1. PROCEDURE

A-1.1 Cut out the lid of the container without altering the height of the double seam. Measure the vertical distance from the top level of the container to the top level of the contents. Remove the contents, wash,

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dry, and weigh the container. Fill the container with distilled water to within 4·8 mm vertical distance below the top level of the container. Record the temperature of water, weigh the container and determine the weight of the water (W_1) by subtracting the weight of the container. Maintaining the water at the temperature recorded above, draw off water from the filled container to the level of the original contents, and determine the weight of the remaining water (W_2) by subtracting the weight of the container.

A-2. CALCULATION

A-2.1 Fill of container, percent
by weight $= \frac{W_2 \times 100}{W_1}$

NOTE — In the case of a container with a lid attached otherwise than by a double seam, remove the lid and proceed as in A-1.1 except that the container shall be filled to the top when determining W_1 .

APPENDIX B

(*Clause 3.4.4*)

DETERMINATION OF THE TOTAL MEAT CONTENT

B-1. APPARATUS

B-1.1 Kjeldahl Flask — 500 ml capacity.

B-1.2 Distillation Assembly — The assembly consists of a round-bottomed flask of 1 000 ml capacity fitted with a rubber stopper through which passes one end of the connecting bulb tube. The other end of the bulb tube is connected to the condenser which is attached by means of a rubber tube to a dip tube which dips into a known quantity of standard sulphuric acid contained in a beaker of 250 ml capacity.

B-2. REAGENTS

B-2.1 Potassium Sulphate or Anhydrous Sodium Sulphate

B-2.2 Concentrated Sulphuric Acid — sp gr 1·84.

B-2.3 Yellow Mercuric Oxide

B-2.4 Potassium Hydrogen Phthalate

B-2.5 Methyl Red-Methylene Blue Indicator Solution — prepared by mixing one part of 0.2 percent solution of methyl red in rectified spirit (*see* IS : 323-1959*) with one part of 0.1 percent solution of methylene blue in rectified spirit.

B-2.6 Phenolphthalein Indicator Solution — prepared by dissolving 0.1 g of phenolphthalein in 100 ml of rectified spirit (*see* IS : 323-1959*).

B-2.7 Standard Sodium Hydroxide Solution — 0.5 N.

B-2.8 Standard Sulphuric Acid — 0.5 N.

B-2.9 Sodium Hydroxide Solution — Dissolve approximately 450 g of sodium hydroxide in 550 ml of distilled water. Cool and filter through glass wool, if necessary.

B-3. PROCEDURE

B-3.1 Determination of Lean Meat Content

B-3.1.1 Accurately weigh about 2 g of the test sample and transfer it to the Kjeldahl digestion flask. Add 10 to 15 g of potassium sulphate (or anhydrous sodium sulphate), 0.1 to 0.3 g of mercuric oxide and 15 to 25 ml of concentrated sulphuric acid. Heat gently until frothing ceases and then heat strongly until the solution becomes clear and continue the digestion for at least 30 minutes longer (about 32 hours are required for complete digestion). Cool, and dilute with about 250 ml of distilled water. Cool to room temperature, add a few glass beads and run 50 ml of the sodium hydroxide solution down the side of the flask so that it forms a separate layer and does not mix with the acid solution at once.

Connect to the distillation assembly, mix the contents of the flask by gentle swirling and then distill off the ammonia in about 250 ml of distillate into an Erlenmeyer flask containing a known volume of excess of standard sulphuric acid. Titrate the excess acid in the Erlenmeyer flask with the standard sodium hydroxide solution using three to four drops of the methyl red-methylene blue indicator solution.

B-3.1.2 Carry out a blank determination using all the reagents in the same quantities but without the material to be tested.

B-3.1.3 Calculation

$$a) \text{ Nitrogen, percent} = \frac{(x - y) N \times 1.4}{W}$$

where

x = volume, in ml, of sulphuric acid neutralized by the ammonia distilled from the sample;

*Specification for rectified spirit (*revised*).

y = volume, in ml, of sulphuric acid neutralized by the ammonia distilled from the blank;

N = normality of the sulphuric acid; and

W = weight, in g, of sample taken.

b) Lean meat content, percent = Nitrogen percent $\times 30$.

B-3.2 Determination of Fat Content

B-3.2.1 Accurately weigh about 5 g of the sample into a suitable evaporating basin containing a short glass rod with a flattened end. Heat on a water-bath until most of the moisture is expelled. Cool the basin and add 25 ml of ether and disintegrate the residue in ether by means of the glass rod. Decant the ether extract through a filter paper. Repeat the maceration and extraction until all the fat has been removed (about five extractions are necessary). Remove the ether from the combined extracts by distillation from a previously weighed 50-ml distillation flask. Dry the flask and contents to constant weight under vacuum in a boiling water-bath.

B-3.2.2 Calculation

$$\text{Fat, percent } (x) = \frac{\text{Weight of ether extract} \times 100}{\text{Weight of sample taken}}$$

B-3.3 Calculation of Total Meat Content — Calculate the total meat content as follows:

Total meat content,

$$\text{percent } (y) = (\text{Lean meat, percent}) + (\text{Fat, percent}).$$

B-3.4 Fat percentage on meat basis (*see 3.4.4*) = $\frac{x \times 100}{y}$

APPENDIX C

(Clause 5.1)

SAMPLING OF PORK LUNCHEON MEAT, CANNED

C-1. GENERAL REQUIREMENTS OF SAMPLING

C-1.1 Sampling shall be done by a person agreed to between the purchaser and the vendor and in the presence of the purchaser (or his representative) and the vendor (or his representative).

C-1.2 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

C-2. SCALE OF SAMPLING

C-2.1 Lot— In any consignment, all the cases containing cans of the same size and from the same batch of manufacture shall be grouped together to constitute a lot.

C-2.1.1 Samples shall be tested for each lot for ascertaining conformity of the material to the requirements of this specification.

C-2.2 The number of cans to be selected from the lot for testing the physical and chemical requirements shall depend upon the size of the lot and shall be in accordance with col 1 and 2 of Table 2. In addition to this, 8 cans shall be selected for testing for microbiological requirements.

TABLE 2 SELECTION OF CANS FOR TESTING

NUMBER OF CANS IN THE LOT	NUMBER OF CANS TO BE SELECTED
(1)	(2)
Up to 200	4
201 to 500	5
501 „ 800	6
801 „ 1 300	7
1 301 „ 3 200	8
3 201 „ 8 000	9
8 001 and above	10

C-2.3 These cans shall be selected at random from a number of packing cases as agreed to between the purchaser and the vendor (or manufacturer). Subject to such an agreement, the minimum number of packing cases to be opened may be in accordance with Table 3. The cans required as in **C-2.2** shall then be drawn at random, equally from these packing cases.

TABLE 3 OPENING OF PACKING CASES

NUMBER OF PACKING CASES IN THE LOT	NUMBER OF PACKING CASES TO BE OPENED
(1)	(2)
Up to 10	2
11 to 25	4
26 „ 64	5
65 „ 100	6
101 „ 150	7
151 „ 225	8
226 „ 300	9
301 „ 500	10

C-2.4 In order to ensure the randomness, random number tables shall be used. In case such tables are not available, the following procedure may be adopted.

C-2.4.1 Arrange all the cans in a systematic manner and starting from any can, every r th can shall be withdrawn,

being the integral part of $= \frac{N}{n}$,

where

N = total number of cans in the lot, and

n = number of cans to be selected.

C-3. NUMBER OF TESTS

C-3.1 A representative sample drawn from the cans, selected for physical and chemical requirements, shall be tested for sodium chloride, nitrate, nitrite, fill of container, total meat content, total fat, vacuum and heavy metals (see 3.2.3, 3.2.4, 3.4.2, 3.4.4, 3.4.5 and 3.4.6).

C-3.2 Tests for Microbiological Requirements

C-3.2.1 *Incubation at 37°C* — 50 percent of the cans selected as in C-2.2 shall be incubated at 37°C for not less than 14 days and subjected to microbiological examination as given in Appendix P of IS : 1743-1960*.

C-3.2.2 *Incubation at 55°C* — The remaining 50 percent of the cans shall be incubated at 55°C for not less than 14 days and subjected to microbiological examination as given in Appendix P of IS : 1743-1960*.

C-4. CRITERION FOR CONFORMITY

C-4.1 A lot shall be considered as conforming to the requirements of this standard if all the samples tested satisfy the corresponding requirements for the characteristics.

*Specification for meat of sheep and goat canned in brine.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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